UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _24 October 2007_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1 and 4-15_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,4,5 and 8-14_ is/are rejected.

7)☒ Claim(s) _6,7 and 15_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _24 October 2007_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All .b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Drawings

1.   Replacement drawings were received on 10/24/07 designating Figures 1-7 as "Prior Art". These drawings are acceptable and have been entered. However, upon further consideration, the drawings are objected to due to the following:

2.   The drawings are objected to under 37 CFR 1.83(a) because they fail to show the "data multiplexing unit" as recited in the claims and described in the specification. Specifically, it is not clear from the specification what constitutes the "data multiplexing unit" in Figure 8.

3.   Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the

drawings will not be held in abeyance.

Specification

4.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: Specifically, it is unclear from the specification and Figure 8

what the "packet replacement unit" comprises in view of the current claim language.

5.   According to the current claim language, "the packet replacement unit"

comprises "an address obtaining subunit", "a null packet detection subunit", "a packet

number obtaining subunit", and "a packet replacement subunit". However, Figure 8 and

the specification teach a "data multiplexing apparatus 1" containing "a packet

replacement unit 112", "a null packet detection unit 111", and "a packet number

obtainment unit 109". Specifically, it is unclear whether the claimed subunits

correspond to the components 109-112 of the specification and Figure 8, or whether

these subunits are other components that are not shown or disclosed. Further

clarification is requested.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims **1, 4, 5, 8-10, and 12-14** rejected under 35 U.S.C. 103(a) as being

unpatentable over Bertram et al. (U.S. 6,996,098) (hereinafter "Bertram") in view of

Robinett et al. (U.S. 6,744,785) (hereinafter "Robinett").

Regarding claims **1 and 5,** *Bertram* teaches the multiplexing system 100 (data

multiplexing apparatus) shown in Figure 1.

Bertram also teaches transport packetizer 135 (data multiplexing unit) of Figure 1

that packetizes an incoming content stream to produce a transport stream (first stream)

interspersed with NULL packets as shown in Figure 2A and spoken of on column 3,

lines 58-64.

Bertram also teaches asset storage 125 (packet stream storage unit) of Figure 1

for storing asset transport packets 210 (second stream of packet blocks) of Figure 2A.

Bertram also teaches transport processor 150 (packet replacement unit) of

Figure 1 that detects NULL packets within the content stream and replaces the NULL

packets with asset packets from the asset packet stream as spoken of on column 5,

lines 28-32.

Bertram also teaches transport processor 150 (null packet detection subunit) that

detects NULL packets within the content stream as spoken of on column 5, lines 28-30.

Bertram also teaches transport processor 150 (packet number obtaining subunit)

of Figure 1 that detects NULL packets within the content stream and replaces NULL

packets with asset packets (number of packets) to form a combined content/asset

stream as spoken of on column 5, lines 28-32.

Bertram also teaches where the number of NULL packets interspersed with the content data packets is sufficient (equivalence) to accommodate all of the asset data packets as spoken of on column 3, line 66 – column 4, line 2.

Bertram does not explicitly teach an address obtaining subunit for obtaining an address for locations of packets stored in the packet stream storage unit as well as the replacement of null packets based upon an obtained address indicating where a packet is stored in the packet stream storage unit.

However, Bertram does teach the use of mapping information by session controller 145 of Figure 1 in order to appropriately map content stream data to asset stream data as spoken of on column 4, lines 26-33.

Further, Robinett teaches a system and method for multiplexing of a transport stream where memory addresses are used for multiplexing transport packets.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the memory address teachings of Robinett with the teachings of Bertram in order to efficiently form a multiplexed stream having a detectable packet sequence.

Regarding claim **4**, Bertram further teaches where the number of NULL packets interspersed with the content data packets is sufficient to accommodate all of the asset data packets (less than or equal to) as spoken of on column 3, line 66 – column 4, line 2.

Regarding claim **8**, Bertram further teaches the asset stream (second packet stream) shown in Figure 2A.

Regarding claim **9**, *Bertram* further teaches the asset stream (second packet stream) shown in Figure 2A.

Regarding claim **10**, *Bertram* further teaches the MPEG content data (video signal) spoken of on column 8, lines 5-14.

Regarding claim **12**, *Bertram* teaches the multiplexing system 100 (transmission apparatus) shown in Figure 1.

Bertram also teaches transport packetizer 135 (data multiplexing unit) of Figure 1 that packetizes an incoming content stream to produce a transport stream (first stream) interspersed with NULL packets as shown in Figure 2A and spoken of on column 3, lines 58-64.

Bertram also teaches asset storage 125 (packet stream storage unit) of Figure 1 for storing asset transport packets 210 (second stream of packet blocks) of Figure 2A.

Bertram also teaches transport processor 150 (packet replacement unit) of Figure 1 that detects NULL packets within the content stream and replaces the NULL packets with asset packets from the asset packet stream as spoken of on column 5, lines 28-32.

Bertram also teaches transport processor 150 (transmission unit) of Figure 1 that provides the content/asset stream to the subscriber terminal via appropriate physical and logical channels as spoken of on column 9, lines 33-38.

Bertram also teaches transport processor 150 (null packet detection subunit) that detects NULL packets within the content stream as spoken of on column 5, lines 28-30.

Bertram also teaches transport processor 150 (packet number obtaining subunit) of Figure 1 that detects NULL packets within the content stream and replaces NULL packets with asset packets (number of packets) to form a combined content/asset stream as spoken of on column 5, lines 28-32.

Bertram also teaches where the number of NULL packets interspersed with the content data packets is sufficient (equivalence) to accommodate all of the asset data packets as spoken of on column 3, line 66 – column 4, line 2.

Bertram does not explicitly teach an address obtaining subunit for obtaining an address for locations of packets stored in the packet stream storage unit as well as the replacement of null packets based upon an obtained address indicating where a packet is stored in the packet stream storage unit.

However, Bertram does teach the use of mapping information by session controller 145 of Figure 1 in order to appropriately map content stream data to asset stream data as spoken of on column 4, lines 26-33.

Further, Robinett teaches a system and method for multiplexing of a transport stream where memory addresses are used for multiplexing transport packets.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the memory address teachings of Robinett with the teachings of Bertram in order to efficiently form a multiplexed stream having a detectable packet sequence.

Regarding claims **13 and 14**, Bertram teaches the method shown in Figure 3.

Bertram also teaches transport packetizer 135 of Figure 1 that packetizes an incoming content stream to produce a transport stream (first stream) interspersed with NULL packets as shown in Figure 2A and spoken of on column 3, lines 58-64.

Bertram also teaches transport processor 150 of Figure 1 that detects NULL packets within the content stream and replaces the NULL packets with asset packets from the asset packet stream as spoken of on column 5, lines 28-32.

Bertram also teaches transport processor 150 that detects NULL packets within the content stream as spoken of on column 5, lines 28-30.

Bertram also teaches transport processor 150 of Figure 1 that detects NULL packets within the content stream and replaces NULL packets with asset packets (number of packets) to form a combined content/asset stream as spoken of on column 5, lines 28-32.

Bertram also teaches where the number of NULL packets interspersed with the content data packets is sufficient (equivalence) to accommodate all of the asset data packets as spoken of on column 3, line 66 – column 4, line 2.

Bertram does not explicitly teach obtaining an address for locations of packets stored in the packet stream storage unit as well as the replacement of null packets based upon an obtained address indicating where a packet is stored in the packet stream storage unit.

However, *Bertram* does teach the use of mapping information by session controller 145 of Figure 1 in order to appropriately map content stream data to asset stream data as spoken of on column 4, lines 26-33.

Further, *Robinett* teaches a system and method for multiplexing of a transport

stream where memory addresses are used for multiplexing transport packets.

At the time of the invention, it would have been obvious to someone of ordinary

skill in the art, given these references, to combine the memory address teachings of

Robinett with the teachings of *Bertram* in order to efficiently form a multiplexed stream

having a detectable packet sequence.

8.   Claim **11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram

et al. (U.S. 6,996,098) (hereinafter "Bertram") in view of Robinett et al. (U.S. 6,744,785)

(hereinafter "Robinett") and in further view of Cheung (U.S. 6,781,601).

Regarding claim **11**, *Bertram in view of Robinett* teaches the apparatus of claim **1**

as described above. *Bertram* further teaches the use of content storage 140 and asset

storage 125 as shown in Figure 1 and spoken of on column 2, lines 57-61.

Bertram in view of Robinett does not explicitly teach where the packet stream

storage unit is a synchronous dynamic RAM.

However, *Cheung* teaches the use of a transport processor in an MPEG

processing environment where SDRAM is used in the processing of transport streams

as spoken of on column 9, lines 31-37.

At the time of the invention, it would have been obvious to someone of ordinary

skill in the art, given these references, to combine the SDRAM teachings of *Cheung*

with the teachings of *Bertram in view of Robinett* in order to provide an efficient way to

store transport stream data in a well-known form of memory that is dynamically

reusable.

Allowable Subject Matter

9.   Claims **6, 7, and 15** are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

10.   The following is a statement of reasons for the indication of allowable subject

matter:

Regarding *amended* claim **6**, *Bertram in view of Robinett* teaches the apparatus

of claim **1**.

Bertram, Robinett, and the other prior art of record do not teach "a multiplexing

order generation unit operable to generate order information indicating an order of

packets to be multiplexed to form the first stream for every cycle of a predetermined

period of time, a multiplexing order storage unit operable to store the order information,

a flag generation unit operable to generate, in the multiplexing order storage unit, a flag

indicating a state of how the packets are stored in the packet stream storage unit, and a

multiplexing total number control unit operable to determine a total number of packets to

be multiplexed for every cycle of the predetermined period of time, based on the flag

generated by the flag generation unit" in combination with the limitations of claim **1**.

Regarding claims **7 and 15**, these claims are further limiting to claim **6** and are

thus also allowable over the prior art of record.

Response to Arguments

11.   Applicant's arguments filed 10/24/07 have been fully considered but they are not persuasive.

Regarding *amended* claims **1 and 12**, Applicant argues that *Bertram* does not teach that the information assets include predetermined blocks of packets. However, as provided above, *Bertram* teaches an asset transport stream 210 in Figure 2A having packet blocks T1 through T9.

Further, Applicant argues that *Bertram* does not disclose or suggest an address obtaining subunit operable to obtain an address, in the packet stream storage unit, for each location at which starting packets are stored. However, it is held that *Bertram in view of Robinett* teaches this limitation as provided above.

Further, Applicant argues that *Bertram* does not teach a way to count a number of information asset packets. However, as provided above, *Bertram* teaches transport processor 150 of Figure 1 that detects NULL packets within the content stream and replaces NULL packets with asset packets (counts number of packets) to form a combined content/asset stream as spoken of on column 5, lines 28-32.

Further, Applicant argues that *Bertram* uses separate storage devices for storage of packets whereas the claimed invention uses a single storage. However, it is stated on column 9, lines 39-44, how a single storage module may be used in place of the asset and content storage modules to perform the same functions.

Therefore, it is held that *Bertram* teaches the above limitations in question.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571)

272-3168. The examiner can normally be reached on Monday-Friday (7:30am -

4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wing F. Chan can be reached at (571) 272-7493. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Moore, Jr.
Examiner
Art Unit 2619

mjm MM

WING CHAN   1/7/08
SUPERVISORY PATENT EXAMINER